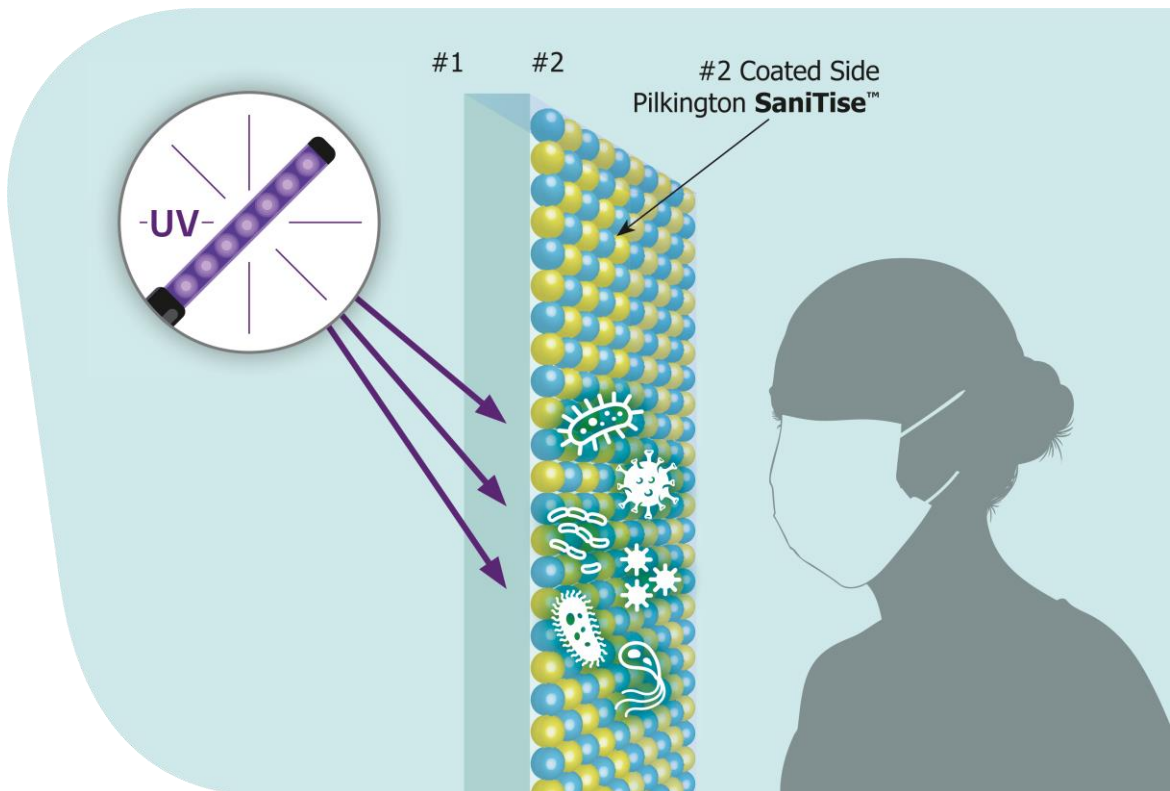


## Artificial UV for Pilkington SaniTise™ – Questions & Answers

### Overview

Pilkington **SaniTise™** is a glass product with a transparent photocatalytic coating that provides antimicrobial properties and activity against enveloped viruses when exposed to UV light. The Pilkington **SaniTise™** antimicrobial coating is activated when exposed to UV radiation from natural daylight or artificial UV irradiation devices.



### Questions & Answers

#### **Which wavelengths of UV light are recommended for Pilkington SaniTise™ activation?**

Sunlight contains UVA (390 – 320 nm) which can be used for coating activation. However, where sunlight cannot reach the glass (indoor installations, or at night-time), artificial sources of UV can be used. In addition to UVA, these sources can be used to produce UVC (280 – 100 nm), which is even more effective at activating the surface (UVC from the Sun does not reach the Earth's surface). In any installation, it is important that photobiological safety is evaluated based on IEC 62471.

#### **What amount of energy is required to activate the coating?**

Testing has shown that using a standard 15-watt UVA 365 nm source (with an effective irradiance of  $0.65 \text{ mW cm}^{-2}$  at a distance of 200 mm) for 5 minutes is enough to activate the coating. Using a UVC source with the same power input will result in shorter activation periods.

## What types of UV source can be used?

Where it is not possible to take advantage of sunlight, artificial UV sources can be used, such as LEDs, fluorescent phosphor lamps, vapor lamps, halogen lamps, cold cathode lamps, and arc lamps. For all lighting types, it is important that photobiological safety is evaluated based on IEC 62471. It is recommended that customers consult lighting manufacturers/suppliers to help specify suitable UV sources, determined by the dimensions and usage of the installation. Some examples of UV sources and suppliers are listed below:

### LED Lighting

#### UVA

[GE White Light + UVA Source](#)

[Ushio UVA LED Range](#)

[Waveform Lighting UVA LED Range](#)

[Nichia UVA and UVC LED Range](#)

[SETi/Seoul Viosys UVA and UVC LED Range](#)

#### UVC

[Klaran WD Series UVC LEDs](#)

[Philips NaturalTrust UVC LED Module](#)

[RayvioXR Series UVC LED](#)

[GECurrent LED UVC](#)

[Waveform Lighting UVC LED](#)

[Nichia UVA and UVC LED Range](#)

[SETi/Seoul Viosys UVA and UVC LED Range](#)

### Tube Lighting

#### UVA

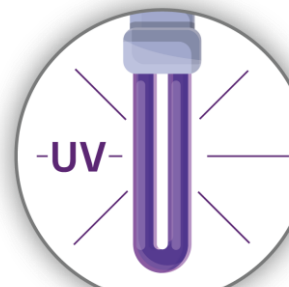
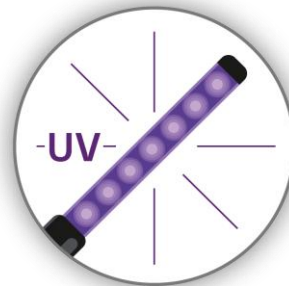
[Philips UVA Tube Lamp](#)

#### UVC

[Sylvania UVC Tube](#)

### Mobile Unit

[Philips Mobile UVC Disinfection Lamp](#)



### Where should the UV sources be positioned?

The UV source should be placed such that the emitted UV will illuminate the face of the glass. Suitable reflector material and housings, such as aluminium, should be used to ensure that the UV energy is directed towards the glass only.

#### Example Configuration 1 – Barrier/Partition mounted



#### Example Configuration 2 – Ceiling/Wall installation



### Example Configuration 3 – Portable lamp



#### **Can mobile/robotic UV sources be used?**

Yes, in addition to static sources, robotic and autonomous mobile UV sources can be deployed to activate the coating. The movement afforded by such devices may allow for increased UV coverage and negate the effects of shading.

#### **How long does the activation last?**

The length of the effect depends on both the intensity and duration of the UV exposure. Studies have shown that even a short UVA exposure can provide an activation period of 2 hours.

#### **What are the safety concerns of UV activation?**

For the same reasons that UV is a powerful tool for disinfection and photocatalytic activation, it is also a potential health risk. Care should be taken not to expose occupants to UV. Illumination should occur when spaces are vacant, and the UV light should be contained within a housing and directed towards the coated glass. Installations should consider a photobiological safety evaluation based on IEC 62471.

#### **Does the sensitivity of the coating or its effectiveness diminish over time and use?**

No, the coating is chemically bonded to the glass and will last the lifetime of the glass itself. The coating can be activated indefinitely and repeatedly without any reduction in performance. Periodic standard glass cleaning to remove inorganic dirt will keep the photocatalytic function at peak performance.